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How teaching on the care of the victim of sexual violence alters undergraduate medical students' awareness of the key issues involved in patient care and their attitudes to such patients

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ABSTRACT

Sexual violence is known to be highly prevalent, albeit the majority of incidents are not reported to the authorities. It is therefore likely that medical students will encounter very many patients who have experienced sexual violence during their postgraduate careers, although this history may never be disclosed to them. Numerous highly regarded sources have advocated for the inclusion of instruction on the care of the victim of sexual violence in undergraduate medical curricula. Moreover, there has been a call for research to measure the effectiveness of educational strategies addressing the issue of sexual violence at undergraduate level. We present an evaluation of the effectiveness of a reproducible teaching session on care of the victim of sexual violence appropriate for undergraduate medical students, looking specifically at alterations in students' awareness of the key issues involved in patient care and their attitudes to such patients. This research demonstrates that such an educational intervention significantly enhances undergraduate medical students' awareness of the issues involved in patient care and their insight in to myths surrounding sexual violence.

1. Introduction

Ireland has had a very poor record in regard to provision of appropriate care for victims of sexual violence.[1] The Sexual Abuse and Violence in Ireland (SAVI) study estimated the overall prevalence of sexual abuse in Ireland by carrying out a telephone survey of over 3000 randomly selected members of the general population.[2] More than one in every four men and women in Ireland reported having experienced a form of sexual abuse. This high prevalence is not unique to Ireland, but in fact, is mirrored internationally.[3] It follows that medical graduates working in any medical discipline are likely to encounter patients who have experienced sexual violence, albeit that this history may never be disclosed. It was reported that of those SAVI study participants who were sexually abused as an adult, 34.2% had never disclosed the abuse to any party other than the confidential SAVI survey. Such under-reporting of sexual crime precludes criminal prosecution, may allow assailants to repeatedly offend, and prevents victims from accessing appropriate healthcare services. Many factors influence victims' decision making in relation to reporting such incidents.[4,5] These include the victims' access to good medical care

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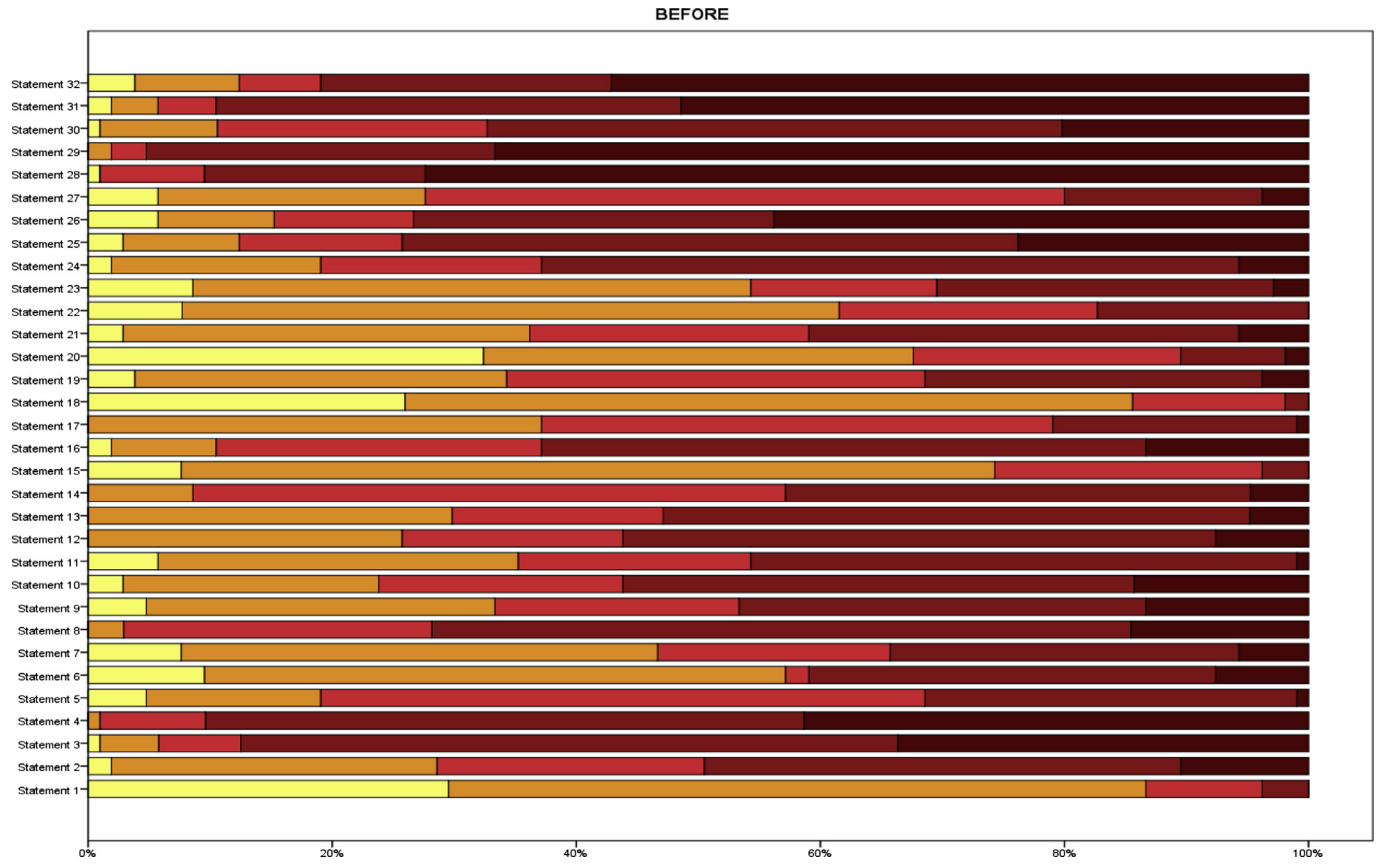

Fig. 1. Responses to pre-lecture survey. Each shade corresponds to an option on the likert scale. On moving from left to right, the brightest shade corresponds to "Strongly agree", the next to "Agree", the next to "Neutral", the next to "Disagree" and the darkest shade corresponds to "Strongly disagree".

Key:
Statement 1: Women who wear certain types of clothing are responsible for their own rape
Statement 2: Rape cannot occur within marriage
Statement 3: In most cases of rape the victim does not know the attacker
Statement 4: A woman cannot be raped by somebody that she is in a sexual relationship with
Statement 5: A woman should feel guilty following rape
Statement 6: During a rape a woman should do everything she can to resist
Statement 7: Everybody is responsible for preventing their own rape
Statement 8: As a medical student, I would know what to do if somebody disclosed to me that they had been raped
Statement 9: I would feel uncomfortable listening to a patient disclose a history of rape
Statement 10: I would feel uncomfortable asking a patient about rape
Statement 11: Rapists frequently use medications/drugs to assist with rape
Statement 12: It is very common for a rape victim to have consumed significant amounts of alcohol in the hours leading up to the incident
Statement 13: Rape is a serious medical condition
Statement 14: Rape victims frequently become pregnant as a result of the incident
Statement 15: Sexual violence is a very common cause of post-traumatic stress disorder
Statement 16: Rape victims in Ireland commonly need treatment to prevent HIV infection
Statement 17: DNA and semen can be obtained for several weeks after an incident of sexual violence
Statement 18: Assailant DNA can be obtained from a rape victim
Statement 19: Genital injuries do not tend to heal well in rape victims
Statement 20: Most victims of rape will have a genital injury
Statement 21: Most victims of sexual violence have significant injuries
Statement 22: A rape victim will be shaky, hysterical and distraught
Statement 23: A rape victim should be forensically examined regardless of his/her wishes
Statement 24: Most rape happens when women are alone outdoors at night
Statement 25: Most allegations of rape are false
Statement 26: If arrested, rapists are likely to be sent to prison
Statement 27: Rape almost always involves physical force
Statement 28: When taking a medical history from a new patient in General Practice, one should routinely ask about a history of sexual violence
Statement 29: Men cannot be raped

provided by knowledgeable and empathetic clinicians. However, a survey of medical schools in the United Kingdom demonstrated that only a quarter provides teaching about sexual assault to undergraduate students.[6] In their conclusion, the authors recognise the inherent challenge in ensuring that all important topics are included in a medical curriculum. However they also clearly state their position on the issue by asking medical schools to "seriously consider" including this topic on the undergraduate curriculum. Anderson et al., in a publication that explored the gender difference in medical students' attitudes towards victims of sexual violence, argued that medical school curricula should include education on sexual violence and, because their study demonstrated that male medical students hold more negative attitudes towards male victims of sexual abuse, they also suggested that schools should include sexual violence against men in the teaching programme.[7] Moreover, the authors proposed that future research in the area should focus upon measuring the effectiveness of sexual violence education in changing medical students' negative attitudes and misperceptions about sexual violence. An editorial in *The Lancet*, entitled "Medical students should be taught about rape", put forward a strongly worded call for the widespread introduction of such teaching: "Victims of rape deserve a better response, and teaching future doctors how to respond would be a good start".[8] Furthermore, this editorial also highlighted the discordance between undergraduate medical education in the United Kingdom and that in Canada where training in how to deal with victims of sexual assault is routinely given to medical students. The Royal College of Physicians, London, has also added its backing to the call for undergraduate education in the area of sexual violence.[9]

2. Aim

The primary objective of the present research study was to design and deliver a reproducible teaching session on care of the victim of sexual violence appropriate for undergraduate medical students and to measure its effectiveness in terms of alteration in students' awareness of the key issues involved in patient care and their attitudes to such patients. Ultimately, it was envisaged that this project would facilitate others in delivering undergraduate teaching on care of the victim of sexual violence, thus improving the standard of healthcare available to these patients. In Ireland, national strategy documents from *The National Office for the Prevention of Domestic, Sexual and Gender-based Violence* (COSC) and from *The Health Service Executive* (HSE) have highlighted the importance of an appropriate healthcare service response to sexual violence.[10,11] An improvement in service delivery, as an outcome of delivery of undergraduate education on the topic, may therefore contribute to redressing the common issue of non-disclosure of sexual violence.

3. Method

3.1. The teaching session

A 2 hour interactive lecture on "*The care of the victim of sexual violence*" was delivered to third year undergraduate medical students. The content was developed by the authors, based upon clinical forensic experience, previous experience of training specialist clinicians at postgraduate level, and with respect to multidisciplinary input from experts in medical education and clinical forensic medicine. The principle objective of the session was to equip future medical graduates with the most relevant knowledge required for an appropriate response to a victim of sexual violence. A key element of this objective was to address commonly held misperceptions about sexual violence. A training DVD, containing role plays of incidents of sexual violence and their aftermath, was used to introduce variety and to help maintain student engagement.

3.2. Survey design and delivery

A questionnaire was designed by partially incorporating a previously validated questionnaire[12] with additional items derived from the authors' own experiences of common misperceptions about sexual crime. In addition, the most important medical facts, relevant to the care of victims, were included. A piloting exercise was carried out using a sample population matched to the target population in terms of level of training, gender, age and country of origin. The survey was administered, using an online platform, in advance of the teaching session. After the session, participants were invited to again complete the questionnaire. Systematic follow-up of non-responders was employed in line with best practice for web-based surveys.

3.3. Approach to data analysis

The data was analysed using SPSS for Windows (v20). The ordered categories were compared before and after the delivery of the teaching session. However, as the online questionnaire was completely anonymised, individual scores were not paired. For comparisons of scores before and after the teaching session, a non-parametric Wilcoxin rank-sum test was used. For the analysis of a trend in students' knowledge or students' preconceived ideas, a Chi-square test for trend was calculated to compare the results before and after the intervention. Significance was set at p-value smaller then 0.05.

3.4. Sampling, recruitment and relevant ethical issues

All students in the class were invited to participate in the study. Given that sexual violence is very common, special care was taken to ensure that any potentially vulnerable student in the class was protected. First and foremost, students were advised that their attendance at the session was not compulsory. The students were addressed one week in advance of the teaching session and provided with an outline of the nature and scope of the material to be covered, so that each student could choose whether or not they wished to attend. A description of the intended research study was provided both verbally and in writing. Due care was taken to assure students that they were under no obligation to participate in the research and that their participation or otherwise would have absolutely no influence on their future course of study at the university. Students who provided written informed consent were invited to complete the first questionnaire in their own time, in advance of the teaching session. At the end of the teaching session, contact details for the Rape Crisis Network of Ireland and for the Galway Sexual Assault Treatment Unit were provided in order to ensure access to appropriate support if required. Ethical approval was granted by the Clinical Research Ethics Committee of the Galway University Hospitals group (Protocol number: CA786).

Statement 30: Most rape victims report the incident to the Gardai/Police
Statement 31: Women over 50 years rarely get raped
Statement 32: Sexual violence occurs frequently

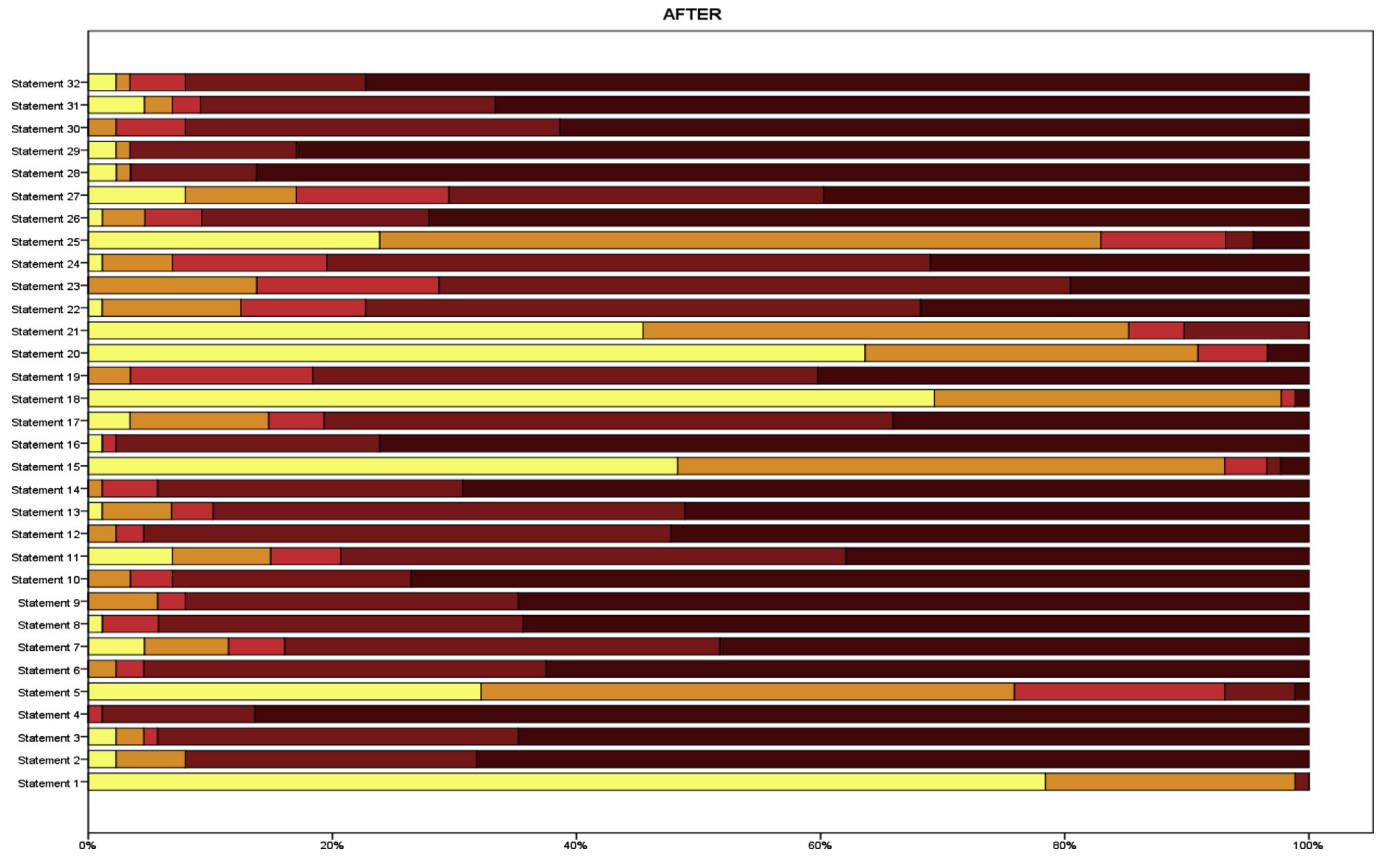

Fig. 2. Responses to post-lecture survey. Each shade corresponds to an option on the likert scale. On moving from left to right, the brightest shade corresponds to "Strongly agree", the next to "Agree", the next to "Neutral", the next to "Disagree" and the darkest shade corresponds to "Strongly disagree".

Key:
As per Figure 1.

4. Results

105 students consented to take part in the study and completed the pre-lecture survey. The majority of participants were Irish (65%) and the remainder were non-European. There was a slight female predominance (56% female vs. 44% male). Of the total 105 student participants, 88 completed the post-lecture survey and 17 did not. Whilst it would have been interesting to know if these non-responders differed somehow from those who completed both surveys, their demographic data is not separately described so as to ensure the anonymity of participants.

The reliability of the survey instrument was calculated using Cronbach's alpha and was found to be 0.77 for the first administration of the survey and 0.74 for the second.

The students significantly improved their knowledge of the clinical and forensic aspects of sexual violence and their insight in to common rape myths, before and after the delivery of the lecture. This improvement is also apparent from the shift towards the darker colours, and the less random pattern in answers, in the stacked bar charts (Fig. 1 and Fig. 2).

All except three of the items on the questionnaire showed significant differences before and after the teaching session. No significant difference was observed for "A woman should feel guilty following rape", "A woman cannot be raped by somebody that she is in a sexual relationship with" and "Rape cannot occur within marriage". The non-significance of these three items may indicate a certain baseline understanding of these issues by the student participants.

5. Discussion

5.1. Summary of main findings

This research demonstrates that it is possible to deliver an effective teaching session on care of the victim of sexual violence to undergraduate medical students and that such teaching alters students' awareness of the key issues relating to patient care and their attitudes to such patients. The most striking finding is that students improved their knowledge of patient care and their insight into rape myths. For the majority of statements included in the survey tool, there was an improvement in students' response before and after the teaching session, thus demonstrating that students benefited from the session.

5.2. Significance of study findings

In the introduction to this paper, the very high prevalence of sexual violence is described. It follows that medical students will frequently encounter victims of sexual violence during their post-graduate careers. As such, it is imperative that medical students are adequately prepared. This can only be achieved by providing teaching that improves students' knowledge and dispels their misconceptions. The concept of "rape myths" was described in a seminal paper on the subject as the false cultural beliefs that mainly serve the purpose of shifting the blame from perpetrators to victims.[13] The term refers to commonly held misperceptions about sexual violence.

An example would be that the majority of sexual violence occurs when women are outdoors and alone at night time, when in reality this is not the case. Such rape myths are very highly endorsed by men and women from various backgrounds.[14] It has been widely suggested in the literature that such misperceptions influence healthcare professionals' management of patients who have experienced sexual violence.[15–17] The present research study included statements representing commonly held rape myths. Students improved their insight into such myths before and after the teaching session. This is a very important finding in the sense that these future doctors may be more likely to respond appropriately to victims, and moreover, may be in a position to dispel misconceptions amongst the general public and amongst other medical and non-medical professionals.

To illustrate the impact that this might have for a victim of sexual violence, one can consider for example, the myth that most victims of sexual violence suffer physical injury. Whilst much debate exists as to the true prevalence of injury in victims of sexual violence, it is widely accepted that very many victims do not suffer any injury and furthermore, with the clinical examination techniques that are routinely employed in Ireland, it is probable that injury will not be identified in most victims who are forensically examined after reporting an incident of sexual violence.[18] Despite this, victim injury is known to play a key role in medico-legal decision making throughout the criminal justice process.[19] Victims are more likely to report sexual crime if they have suffered a physical injury.[4,5] Moreover, the police are more likely to investigate a reported sexual crime when physical injury is present.[20] Prosecution rates and conviction rates are also increased in cases in which the victim has sustained injury.[21] Together, these research findings demonstrate that key decisions in the medico-legal process, from the decision to report the crime to the decision to convict the alleged assailant, are influenced by the presence or absence of injury in the victim. By taking this single myth as an example, it is possible to understand how a doctor, who has not received education on sexual violence, may believe that most victims of sexual violence will have an injury. This in turn may influence a doctor's willingness to believe a victim who chooses to disclose an incident, and furthermore, may also influence the doctor's ability to advocate on behalf of such a patient in a medico-legal arena. Finally, if victims of sexual violence feel that their doctor will not believe their story on the basis that they have no injury, then one reason for the terribly low rates of disclosure of sexual violence, as evidenced in the SAVI report, is obvious.

5.3. Existing research on sexual violence awareness in medical students

A small number of studies have attempted to address the issue of rape myth acceptance and rape attitudes amongst medical students. Williams et al. used a specifically developed attitudinal questionnaire to sample fourth year medical students' perceptions of sexual violence.[12] In general the students were unlikely to agree with rape myths and they demonstrated a reasonable understanding of the reality of sexual violence. Williams also demonstrated a statistically significant gender difference in responses, with male medical students being more likely to accept rape myths as being correct, and female students being generally more sympathetic in their attitudes towards victims of sexual violence. This finding is consistent with other existing research that demonstrates males, in the wider population, to be more accepting of rape myths.[22] However, the study was methodologically flawed. Firstly, the students who participated in the research study where those who self-selected to participate in a wider educational programme on genitourinary medicine. Thus the sample is not representative of medical students in general. Secondly, the questionnaire, which was newly developed by the researchers, was not piloted and, as the authors themselves point out, the meanings of some of the items may not have been clear. The present research study builds upon existing research by providing a more methodologically robust analysis of medical students' rape myth acceptance and attitudes towards sexual violence.

Remarkably another attempt to address this issue, through research conducted in Malaysia by Sivagnanam et al., repeated the methodological flaws that were present in the previous study by Williams.[23] In the publication, the authors acknowledge that they administered what they knew to be an unpiloted and potentially flawed survey to their students with a view to assessing their prevailing attitudes to sexual violence. Despite this, the study is of interest, as the population of Malaysian medical students is partly representative of the population enrolled in the present study and significant cultural differences are noteworthy. For example, marital rape (i.e. forced sexual intercourse between married partners) does not exist formally under Malaysian law. This is in contrast to the Irish situation whereby "any rule of law by virtue of which a husband cannot be guilty of the rape of his wife" was abolished by section 5 of the Criminal Law (Rape) Amendment Act, 1990.[24] Sivagnanam reported that only 20% of the medical students surveyed had a "positive" (i.e. accepting/sympathetic) attitude towards sexual violence. There was a high level of rape myth acceptance. Once again, this research study identified a gender difference in attitudes between male and female medical students, with female students being more likely to have a positive attitude towards sexual violence.

5.4. Strengths and limitations

Limited generalisability of the study results is acknowledged on the basis that a significant proportion of the participants were of Malaysian origin. This is reflective of the study university's student profile. The study results may not be representative of other medical student populations because the societal concept of sexual violence varies internationally.

It is acknowledged that this study was executed within the principle investigator's own institution, and as such the included population could be described as a convenience sample. The principal investigator (PI) recognises that carrying out research in the institution where he is employed may have influenced the research process. The "power relationship" between the PI and the students may have influenced students' participation in the project. Alongside this, the PI had particularly strong rapport with this student group, as evidenced by their exceptionally positive evaluation of a module that he was responsible for delivering to them in the preceding academic year. This may explain the higher than expected response rate. In the normal course of events, a high response rate would be considered to add to the strength of research findings. However, in the present case consideration must be afforded to the possibility that outcomes may be inappropriately altered by students' strong desire to please the PI by participating in the study.

On reflection, this research would have ideally been carried out by a researcher who was independent of the delivery of the teaching session. The principle aim of the educational intervention is to influence the students' knowledge and attitudes. It is acknowledged that the PI feels very strongly about the importance of this particular subject matter, and, as such, it is likely that he may bring much of his own attitudes and prejudices to the teaching session. Thus, it is noted that these results may need to be interpreted with caution as there may well be an element of participants biasing their own responses so as to align with views that they would anticipate the principal investigator to hold as correct and acceptable. It is recognised that a student, who already holds the principal investigator in high regard, will be less inclined to disagree with the PI.

It is also noted that participation in the research study itself is likely to influence the students' engagement with the teaching

session, because students who complete the questionnaire before the session are probably more likely to have the interest drawn to the topic and thus may be more inclined to participate and pay attention to the teaching. Thus it is possible that delivery of the teaching session in isolation, at another institution for example, may not have the same effect on students' knowledge and attitudes.

That students, who choose not to attend the session, were not tracked in any way is a possible confounding factor. It would be ethically inappropriate to obtain data on these individuals, thus it will not be possible to know if they differ in some way from the remainder of the group.

The PI has the requisite clinical knowledge and expertise to develop a teaching session in the field of sexual violence. This is exemplified by a significant forensic case load, peer reviewed publications in the field, a masters degree in forensic medicine and acknowledgement by the Circuit Criminal Court of Ireland as "an expert in his field". It is suggested that such background enhances the rigour and relevance of the research process.

6. Conclusion

Given its very high prevalence, it is likely that medical students will encounter sexual violence during their postgraduate careers. Existing research demonstrates that this topic is not addressed in the majority of medical school curricula. Research targeted at a range of medical and legal professionals demonstrates how rape myths can impact upon medico-legal outcomes for victims of sexual violence. A knowledge gap existed in the area of medical students' acceptance of rape myths, and more importantly, the effectiveness of educational strategies that might be employed to address the issue of sexual violence at undergraduate level. This research demonstrates that delivery of teaching on the care of the victim of sexual violence alters undergraduate medical students' awareness of the issues involved in patient care and their insight in to myths surrounding sexual violence.

National strategy documents from *The National Office for the Prevention of Domestic, Sexual and Gender-based Violence* (COSC) and from *The Health Service Executive* (HSE) have highlighted the importance of an appropriate healthcare service response to sexual violence.[10,11] It is acknowledged that multidisciplinary healthcare and forensic needs of patients who have experienced sexual violence are complex and highly specialised.[25] It is not suggested that medical students should receive high-level training in the area of sexual violence. However, an educational session that discusses the key issues involved in the care of the victim of sexual violence, and that addresses commonly held rape myths, may facilitate the development of medical students into knowledgeable doctors who are empowered to manage the medical care of victims of sexual violence.

Ethical approval

Ethical approval was granted by the Clinical Research Ethics Committee of the Galway University Hospitals group (Protocol number: CA786).

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Conflict of interest

None.

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